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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

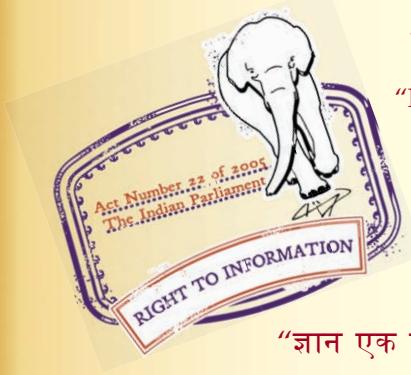
“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 10864 (1984): Recommendation for heat exchanger gasket
[MED 30: Gaskets and Packing]



“ज्ञान से एक नये भारत का निर्माण”

Satyanaaranay Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartṛhari—Nītiśatakam

“Knowledge is such a treasure which cannot be stolen”



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Indian Standard

RECOMMENDATIONS FOR HEAT EXCHANGER GASKETS

1. Scope — Covers the design, material, shape, construction and other details of different type of heat exchanger gaskets.

2. Materials — Heat exchanger gaskets generally shall be made out of single material or composite materials to suit the specific application and service condition.

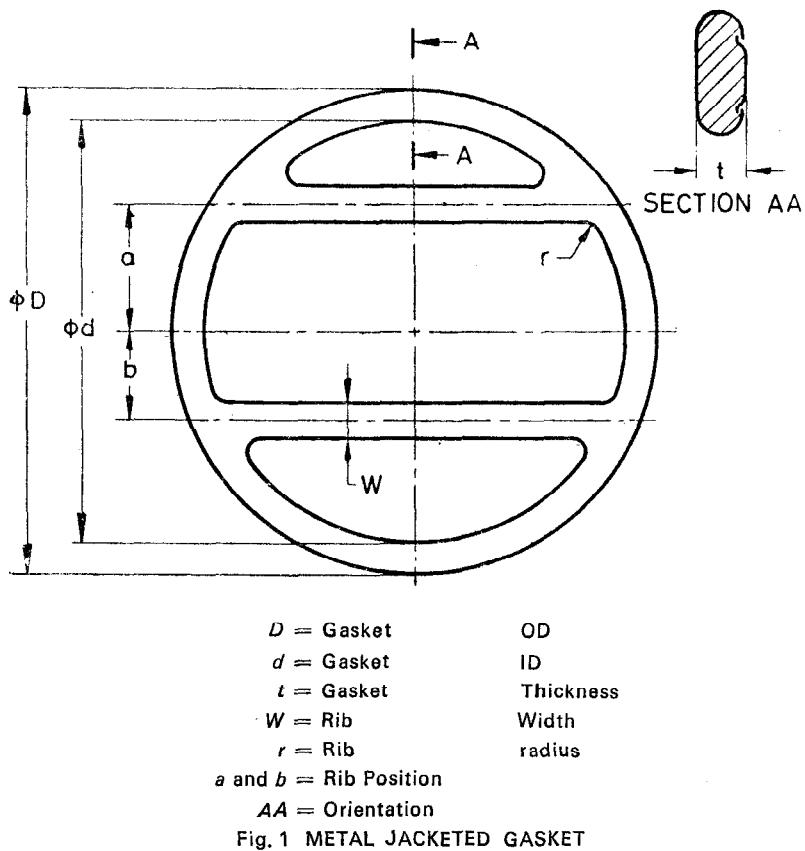
The following shall be the general material out of which heat exchanger gaskets are manufactured:

a) Soft iron/carbon steel conforming to IS : 4030-1973 'Cold rolled carbon steel strip for general engineering purposes (<i>first revision</i>)'	Hardness, <i>Max</i> , 90 BHN
b) Admiralty brass conforming to IS : 410-1977 'Cold rolled brass sheet, strip and foil (<i>third revision</i>)'	Soft annealed
c) Copper conforming to IS : 8362-1977 'Copper and copper alloy rolled plates for condensers and heat exchangers'	Soft annealed 80 BHN
d) Aluminium conforming to IS : 737-1974 'Wrought aluminium and aluminium alloys and strip for general engineering purposes (<i>second revision</i>)'	Soft annealed
e) Monel conforming to IS : 4131-1967 'Nickel copper alloy casting'	Soft annealed 140 BHN
f) Brass conforming to IS : 8362-1977	Soft annealed 80 BHN
g) Stainless steel conforming to IS : 6911-1972 'Stainless steel plate sheet and strip'	Hardness, <i>Max</i> , 140 BHN
h) Compressed asbestos conforming to IS : 2712-1979 'Compressed asbestos fibre jointings (<i>second revision</i>)'	
j) SS jacketed asbestos	Hardness, <i>Max</i> , 140 BHN
k) Soft iron jacketed asbestos	Hardness, <i>Max</i> , 90 BHN
m) Monel jacketed asbestos	Soft annealed 140 BHN
n) Brass jacketed asbestos	Soft annealed 80 BHN
p) Copper jacketed asbestos	Soft annealed 80 BHN
q) Aluminium jacketed asbestos	Soft annealed

Any other material may be used as agreed to between the manufacturer and the purchaser.

3. Construction

3.1 Heat exchanger gaskets shall be made in one piece as shown in Fig. 1. This shall not exclude gaskets made integral by welding.



3.2 Complete gasket including all ribs and each lamination of gaskets shall be cut from a single sheet.

3.2.1 If the size of the gasket exceeds the commercially available metal or material, proper jointing is permitted.

3.3 Heat exchanger gaskets of jacketed type are made by cladding the soft filler material, like asbestos either partially or wholly with a stronger supporting metal. The following thicknesses of the filler material shall be used for these gaskets:

- 0.6 mm
- 1.0 mm
- 1.6 mm
- 3.15 mm, and
- 4 mm.

Unless otherwise specified by the purchaser, the soft filler material shall be asbestos of good quality chrysotile.

3.4 Metal used in the jacketed gaskets exceeds the size of the commercially available metal sheet joints are permitted.

3.4.1 Joints in the jacketed gasket shall be made by butt-welding the edges.

3.4.2 Excess metal in the joint shall be removed and the thickness at the joint shall be the same as adjacent metal.

There shall be 150 mm gap between the joints in the opposite faces of the jacketed gasket.

4. Design — The jacketed material thickness shall be 0.375 mm minimum and 0.5 mm maximum.

4.1 The filler material thickness shall be 1.5 mm minimum.

4.2 Unless otherwise specified by the purchaser, the closing lip of the folding shall be 2.5 mm minimum and the fillet radii shall be 10 mm.

5. Dimensions and Tolerances

5.1 Dimensions — Heat exchanger gaskets are always custom-built which necessarily demands the purchaser to provide the details of material, shape and size and the dimensions of the gaskets clearly.

Wherever orientation of the gasket with respect to the flange seating is preferred, it shall be clearly mentioned in the drawing provided by the purchaser.

5.2 Tolerance — Unless otherwise specified by the purchaser, the following dimensional tolerances shall be followed for all types of heat exchanger gaskets:

a) OD of the gasket	± 0.8 mm
b) ID of the gasket	± 0 mm
c) Position of the pass partition rib	± 0.8 mm
d) Width of the rib	$+ 0$ mm $- 0.8$ mm
e) Thickness of the gasket	$+ 0.35$ mm $- 0$ mm

6. Shipment

6.1 Gaskets shall be properly protected from rust and other surface damage.

6.2 Gaskets shall be properly packed and protected from distortion and damage while in transit.

6.3 Gaskets shall be tagged or marked with the symbol and other drawing numbers for easy identification.

EXPLANATORY NOTE

Since heat exchangers gaskets are needed for all joints in contact with oil or oil vapour, the material and dimensions of the gaskets have to be carefully selected.